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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------|-------------|----------------------|---------------------|------------------|
| 09/905,661 | 07/12/2001 | Warm Shaw Yuan | M-8832 US | 7565 |
| 24251 | 7590 | 11/04/2003 | EXAMINER | |
| SKJERVEN MORRILL LLP | | | CHASE, SHELLY A | |
| 25 METRO DRIVE | | | ART UNIT | |
| SUITE 700 | | | PAPER NUMBER | |
| SAN JOSE, CA 95110 | | | 2133 | |

DATE MAILED: 11/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/905,661

Applicant(s)

YUAN ET AL.

Examiner

Shelly A Chase

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-17 is/are allowed.
- 6) ☒ Claim(s) 1-8 and 18-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1 to 26 are presented for examination.

Information Disclosure Statement

2. The references listed in the information disclosure statement submitted on 7-12-2001 have been considered by examiner (see attached PTO-1449).

Claim Objections

3. Claim 1 is objected to because of the following informalities: please change "the (n-1)th bit" recited on line 18 to --- a (n-1)th bit ---.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1 to 8 and 18 to 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, recites the limitation "said method comprising" on line 4 and "generating a second table having kN entries based on said first table where k is an integer and kN has a value being the power of 2, comprising:" The claim is vague it is unclear what the

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method comprises. Claims 3 to 8 are also rejected due to their dependency on a rejected base claim. Claim 18 has a similar problem. Claim 18 and dependent claims 19 to 26 are also rejected under 35 U.S.C. 112 second paragraph.

Claim 2, recites the limitation "the notation [x]" on line 2. There is insufficient antecedent basis for this limitation in the claim.

Allowable Subject Matter

6. Claims 1 to 8 and 18 to 26 would be allowable once the 112 second paragraph rejection is overcome.

7. The following is a statement of reasons for the indication of allowable subject matter: the prior art made of record fail to teach or fairly suggest a method for performing a table look-up operation on a first table having N entries, said first table having a first data field of table index values and a second data field of computed table values, said table index values of said first data field being separated by one or more intervals, said method comprising: computing an index value z and extracting address bits from said index value z, said address bits being data bits more significant than (n-1)th bit of said index value z. Claims 2 to 8 are directly or indirectly dependent on claim 1 thus, these claims are allowable over the prior art made of record.

8. Claims 9 to 17 are allowed.

9. The following is a statement of reasons for the indication of allowable subject matter: the prior art made of record teaches various methodologies of turbo decoding

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implementing maximum a posterior probability decoding with a look-up table and a scaling factor. For instance, Caldara et al. (USP 6425107 B1), discloses a decoder for high-speed serial link wherein the decoder includes a look-up table with plural entries. Dinc et al. (USP 6393076 B1), discloses decoding turbo codes wherein a decoder includes two soft-in soft-out (SISO) decoders and a scaling circuit. Dinc also teaches MAP decoders computing logarithmic values. Hladik et al. (USP 6263467 B1), discloses turbo code decoder employing MAP decoding algorithm, and Such et al. (USP 6477679 B1), discloses a method for decoding data employing MAP decoding and scaling the decoded data. However, the prior art made of record fail to teach or fairly suggest the novel element of the instant invention.

Claim 9:

The primary reason for allowance is that the claim subject of a decoder implementing the maximum a posterior probability decoding algorithm wherein the function $\log(e^{x_1} + e^{x_2})$ or $\ln(e^{x_1} + e^{x_2})$ for each argument value x_1 and x_2 in a table with plural entries, plural fields and plural index values are computed. Claims 11 to 17 are directly or indirectly dependent on claim 1 thus, these claims are allowable over the prior art made of record.

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Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shelly A Chase whose telephone number is 703-308-7246. The examiner can normally be reached on Mon-Thur from 8:00 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on 703-305-9595. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-9600.


Shelly A Chase